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THE RELATIVE VALUE OF AMPUTATION, AND OF ATTEMPTS TO PRESERVE THE LIMB, IN GUN-SHOT FRACTURE OF THE THIGH; AND SOME CONSIDERATIONS ON THE OPERATION OF DISARTICULATION AT THE HIP-JOINT.

[Translated from the "Traité de Chirurgie d'Armée," par L. Legouest, Médecin Principal d'Armée, Professeur de Clinique Chirurgicale à l'École Imperiale (Val de Grâce), &c. Paris. 1863.

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FIRST PAPER.

THE original results obtained by the collation of statistics by Dr. Legouest are sufficient of themselves to render his conclusions noteworthy and valuable: while his facilities for observation in his high position in the Medical Corps of the French Army guarantee their accuracy. No further explanation is therefore required for submitting them to the readers of the JOURNAL. We would only remark that the results deduced from the statistics of wounds and surgical operations are not liable to so many sources of fallacy as purely medical ones, though none can be considered infallible.

TRANSLATION.

All fractures of the thigh by gun-shot wounds have been, for a long time, considered by the majority of surgeons to demand imperiously the amputation of the limb. Ribes propounded this rule as an absolute one; and his opinion, supported by those of Ravaton, Percy, Larrey, Dupuytren, Bégin, Baudens and others, acquired the force of a law in military surgery, although some of the distinguished surgeons whom we have just named had fortunately departed from the principle laid down by themselves. Yet Fournier-Pescay, a contemporary of Ribes, wrote in 1813, "It is at the present epoch of military surgery that we have succeeded in curing gun-shot fractures of the thigh occurring in the shaft of the bone. J. L. Petit had never seen one cured; amputation was always performed under such circumstances. The author of this article cured five; three of whom were in the military hospital at Brussels, in

1794. He had, before this period, attended General Schinner, who recovered perfectly." Ribes himself, returned to the *Invalides* after the campaigns of Russia and Saxony, was very much astonished to see admitted to the *Hôtel*, between the years of 1814 and 1822, seven soldiers who had had the femur fractured in its middle, and who had recovered without amputation. Isolated facts, observed in the field, and others, more numerous, collected during the periods of civil disorder, had already shaken the convictions of surgeons, when Malgaigne declared in the Academy of medicine, that he repudiated, for his part, the doctrine of amputation, and that adding his own experience to that of others, he had determined to attempt the preservation of the limb. The contradictory statements put forth on this subject demanded new researches. Since that time, Hutin, one of the successors of Ribes at the *Hôtel des Invalides*, resumed the investigations which that surgeon had begun; and the author of this book instituted the inquiry as to the relative proportion of recoveries after fracture of the thigh, treated, on the one part by amputation, on the other by the preservation of the limb, during the Crimean campaign. Hutin found at the *Hôtel des Invalides*, from 1847 to 1853, a considerable number of old soldiers who had comminuted gun-shot fractures, which had not been amputated.

With the femur fractured at the lower fifth	10
" " " " lower third	8
At the middle third, below the middle	1
At the middle	20
At the middle third, above the middle	7
At the upper third	7
With the femur fractured at the upper fourth	6
" " " in the neck or trochanters	4
Total	63

Which gives:—

Fractured below the middle third	18
" in the middle third	28
" above the middle third	17
Total	63

Or again:—

Fractures at the middle of the femur	20
" below the middle "	19
" above the middle "	24
Total	63

The fractures at the middle and below the middle of the femur are each a little less than a third of the total number; and the fractures above the middle are a little more than a third of this

number. At the same time there were 21 invalids with amputation of the thigh:—

For comminuted fracture of femur,			lower fifth . .	10
"	"	"	lower third . .	6
"	"	"	in the middle . .	5
			Total . . .	21

There was no case of amputation of the thigh for gun-shot fracture above the middle of the femur. This peculiarity, if it be not accidental, which it is difficult to believe, is to be accounted for probably because the amputations high up on the thigh have been fatal. These figures show that of 84 gun-shot fractures of the thigh at the *Invalides*, between 1847 and 1853, 63, or three fourths, had been treated without amputation, and 21, or one fourth, by amputation; but they do not give the proportion in which the wounded with fractures of the thigh recovered, according as they were amputated or not.*

My researches on amputations of the thigh in consequence of gun-shot wounds show that during the eastern campaign, 1664 soldiers submitted to amputation of the thigh for various injuries of the lower extremity, including fractures of the femur; while 337 soldiers, suffering from fractures of the thigh, were treated by preserving the limb.

Of the 1664 amputated,		123 recovered.
"	"	1541 died.
Total		1664

The 337 fractures of the femur, treated without amputation, give:

Recoveries	117
Deaths	220
Total	337

Whatever its cause may be, the first fact which strikes us in the results of amputations of the thigh, compared to the fractures of the femur treated without amputations, is that the amputations gave five times less recoveries than the fractures not amputated. It is allowable to suppose that if the 1664 amputations of the thigh had been all operated on in consequence of fractures of the femur, their chances of death or recovery would have been unaltered; and accepting this supposition, it results that in the Army of the East the chance of recovery from amputations was:—

At the upper third	of the thigh	6	per 100.
" middle third	" "	6	per 100.
" lower third	" "	10	per 100.

* So, also, in the "Consolidated Statement of Gun-shot Wounds" in the U. S. Hospitals, for four months of 1862, there were 749 gun-shot fractures of the femur, of which 269 were amputated, 27 excised and 453—more than half—were treated without operation. Unfortunately, the comparative results are not given.

while the chance of recovery without amputation, was for fractures:

Of the upper third of the thigh 31.5 per 100.
" middle third " " 31.75 per 100.
" lower third " " 42 per 100.

We do not attribute to these figures absolute certainty; but we think they allow us to establish an approximate ratio between the success of the treatment of fractures of the thigh without amputation and the success of treatment of these fractures by amputation. This ratio is:—

For the upper third of the femur, as 31.5 is to 6.
For the middle third of the femur, as 31.75 is to 6.
For the lower third of the femur, as 42 is to 10.

In a general way, the proportion of the whole 117 survivors of the 337 wounded, not amputated, is 35 per 100; that of the whole 123 survivors of the 1664 wounded, amputated, is 7.4 per 100. The ratio of these totals is as 35 to 7.4: in other words, in the war of the Crimea, the men treated for fractures of the thigh by preserving the limb, recovered in a proportion about five times greater than the men treated by amputation of the thigh, for any traumatic injury of the lower extremity whatever.*

It is rather remarkable to see that these figures, if they do not exactly agree with the results of Hutin, lead at least to analogous conclusions; although, as we have already said, the figures given by Hutin are not comparative, and that the excess, at the *Hôtel des Invalides*, of men not amputated over the amputated may depend on this, that those amputated, walking well and being able to satisfy their needs, do not enter the *Hôtel;* while those not amputated, preserving a limb more or less useful and sometimes the seat of secondary accidents, come there to seek a living and better nursing.

However it may be, the last campaign in Italy (1859), for which the return of wounds has not yet been settled, has left an impression in the minds of a great number of surgeons, that gun-shot fractures of the thigh do not always require amputation. For our own part, we have seen in the hospitals at Bergamo, Brescia and Milan, some facts of this kind, the number of which we do not dare to state precisely, for fear of giving figures which might prove erroneous.

If, in the considerations which we have just presented, we have

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* In the United States Hospitals in 1862, the mortality of amputations of the thigh was as follows:—

Amputations of the lower third,	119.	Deaths, 62.
" " middle third,	129.	" 65.
" " upper third,	64.	" 45.
	312.	172.

Giving a ratio of mortality for
The lower third about 50 per cent.
The middle third about 50 per cent.
The upper third about 66 per cent.—[Op. cit., Table 4.

not absolutely established the truth, we think we have arrived at probabilities, which many surgeons will not hesitate to admit. This point of practice, in respect to military surgery, demands, perhaps, more observations, which, we hope, will be followed out, and will corroborate our own. We will conclude by saying, that, under good circumstances, that is to say in the case of simple fractures without extensive loss of osseous substance, when the wounded man need not be transported, and is placed in a wholesome locality, and provided with every material and surgical resource, amputation may be postponed; under opposite circumstances, amputation should be performed.

Hip-joint.—Experience has proved that in cases of fracture of the neck or head of the femur, amputation ought not to be done immediately. Jubiot discovered first this exception to the general rule, which prescribes that amputations recognized as indispensable should be performed at once. More recent works, and particularly my "Memoir on disarticulation at the hip-joint in military surgery," and the review of this work by H. Larrey, have proved, that all disarticulations of the hip done early have been followed by death. It is easy to be convinced of this by glancing at the following table.

Disarticulations at the Hip-joint for Gun-shot Wounds.

IMMEDIATE OPERATIONS.

Surgeons.	*No. Operations.*	*Recoveries.*	*Deaths.*
Larrey. Clinique Chirurgicale.	6	..	6
S. Cooper. Dictionnaire.	2	..	2
Letulle. Relation du siege d'Anvers.	1	..	1
Hutin. Memoires.	2	..	2
Sédillot. Annales de Chirurgie.	5	..	5
Guyon. Expédition de Cherchell.	1	..	1
Richet. Journées de Juin, 1848.	1	..	1
Jubiot. These de Montpellier.	3	..	3
Armée d'Orient (Crimée).	9	..	9
Totals,	30	..	30

MEDIATE OPERATIONS.

Larrey. Clinique.	1	1	..
Guthrie. Clinique de Larrey.	1	1	..
Baudens. Traité des Plaies, &c.	1	1	..
Wedemeyer. Bulletin.	1	..	1
Robert. Journées de Juin.	1	..	1
Guersant. Idem.	1	..	1
Vidal. Traité de Pathologie.	1	..	1
Mounier. Constantinople, 1854.	3	..	3
Legouest. Idem.	1	..	1
Totals,	11	3	8

		ULTERIOR OPERATIONS.	
Wedemeyer. Op. cit.	1	..	1
Browig. 12 Decembre, 1812.	1	1	..
Clot-Bey. Marseille, 1830.	1	..	1
Totals,	3	1	2*

If we add to these figures the primary disarticulations of the hip-joint performed in the Crimea by the English Surgeons, which are seven in number, we find that not one of the thirty-seven wounded, operated on immediately, survived: that nearly three-fourths of those who underwent a secondary operation, succumbed: and that two-thirds only of those operated on at a remote period, died. H. Larrey, in his review of my memoir, confirms by additional observations the opinion which we have expressed, namely; that immediate disarticulation at the hip-joint ought only to be undertaken when the limb is almost separated from the trunk.

It is proper to inquire if the same reservation ought not to be applied to gunshot fractures of the upper third of the femur. We have found that the proportion of recoveries among the amputations of the thigh in the Crimea, was

At the upper third, 6 per 100.
" " middle third, 6 per 100.
" " lower third, 10 per 100.

while the proportion of recoveries without amputation was, for fractures,

Of the upper third, 31.5 per 100.
" " middle third, 31.75 per 100.
" " lower third, 42 per 100.

The medical and surgical history of the English Army during the same campaign, gives the following proportion of recoveries, after amputations of the thigh:

At the upper third, 8.2 per 100.
" " middle third, 47.7 per 100.
" " lower third, 50 per 100.

Finally, Ribes and Hutin have not found at the *Invalides*, a single case of amputation of the thigh, above the middle of the femur.

Amputation of the thigh at the upper third of the femur is then one of the most serious operations, which, according to the above statistics, gives a mean of only 7.1 per cent. of recoveries.

If, in fractures of the head and neck of the femur, the immediate amputation of the limb ought to be absolutely postponed for a later operation, for a resection, or even an attempt to preserve the member, perhaps it would also be better not to amputate immediately in the case of a fracture of the upper third of the femur, but to attempt a cure without mutilation, or to amputate only at a remote period.

* "U. S. Gun-shot Wounds," *op. cit.*, gives two disarticulations at the hip-joint for gun-shot wounds; both mediate operations, and both fatal.

EUROPEAN OPHTHALMIC INSTITUTIONS. No. III.

[Communicated for the Boston Medical and Surgical Journal.]

MESSRS. EDITORS,—In continuing my account of the present state of ophthalmic medicine in Europe, I shall venture, at the risk of being tedious, to say a little of some institutions less known to fame, but not without certain special excellencies of their own, and well worthy of a brief notice.

Spain is not wholly destitute of practitioners who have made themselves acquainted with diseases of the eye and their proper treatment; but, as a rule, I am inclined to think the members of the Profession, in this, as in respect to the general practice of medicine, fall below the average standard attained by those of neighboring countries. Spain itself is in arrears, as regards civilization; but is evidently awaking to a consciousness of this fact, since the recently commenced introduction of railways, and is making strenuous efforts to regain a position in the front of the march of nations. But time must yet elapse before the proud lethargy of centuries can be recovered from.

It is evident that diseases of the eye, exist to a large extent, in many parts of Spain. The explanation of this it is not difficult to find in the climate and in the habits of the lower classes. It is a peculiar country. Divided by ranges of mountains, the included spaces form vast table lands almost destitute of water except when the Spring freshets rush furiously across them to the sea. These table lands are exposed, during the dry season, to an almost tropical sun, but at the same time are liable to be swept by sudden blasts of cold winds from the snow-covered peaks. Under the former scorching influences the roads, in a country where rain does not fall in the Summer, become almost rivulets of dust. The dark interior and brightly-whitewashed outside of the houses, in a large proportion of the villages; the fact that the smoke from the herbs used, as almost his sole fuel, has ample time to fill the house and the eyes of the peasant before finding its way out at the hole in the roof designed for its exit; the neglect of personal cleanliness, rendered almost a necessity by the scarcity of water—may all have their influence in creating a sensitive condition of the eyes. When the peasant goes from his ill-lighted hovel into the bright glare, to be exposed to clouds of dust and blasts of cold, it is not to be wondered at that catarrhal inflammation of the conjunctiva should be the frequent result, or that existing, it should often be aggravated by the same causes to most serious degrees.

Large numbers of cases may be seen in many small places in the country, and in passing along the highways, and the numerous blind petitioners for charity, both in city and country, indicate much neglect or bad management. I saw less of it in some almost Moorish towns, and I am told that it is rare to see a Moor, in his own coun-

try, with inflamed eyes; although, as we know, ophthalmia is so common in Egypt.

Rome has an eye infirmary of considerable size and charmingly situated, supported by the munificence of Prince Torlonia, and under the care of Dr. Mattoni. The surgical and medical treatment of a large number of cases seemed to be exceedingly judicious and successful. I found the Doctor, like other Italian practitioners, a warm advocate for the old Italian method, revived by Mons. Desmarres, of treatment of fistula lachrymalis, and even of chronic inflammation of the sac, where no fistula exists, by destruction of the sac, either by the actual cautery or by caustics. Subsequent caries of the bone, however, rendering the cure tedious and unsatisfactory, seemed to me to be an unpleasantly frequent sequel.

No physician should leave Rome without having visited the great Hospital of Santo Spirito. In the season of autumnal fevers it sometimes contains three thousand patients, and the number is at all times very large. Professor Valery's pleasant courtesy will never be forgotten by those who have made his acquaintance, and his perfect knowledge of English and French renders him able to make interesting explanations of the management of the hospital and treatment of the patients, to such strangers as may be at fault in regard to the Italian language. The museum of this hospital contains a very large number of instructive preparations—among which may be mentioned, as especially valuable to the student, the numerous carefully elaborated specimens exhibiting the pathological anatomy of the different forms of hernia, showing the exact relations of the sac to the contiguous parts—and many preparations of various aneurisms, at different stages of development—forming, together, a complete picture of the disease.

Turin has a very large new ophthalmic hospital, favorably placed on a part of the space formerly covered by the citadel, which is now being demolished. It is intended as a self-supporting institution, a certain proportion of the patients paying a moderate sum, which will defray the expenses of the free beds. It is under the charge of Professor Sperino, whose opinions in regard to the treatment of cataract without operation have attracted so much attention. His plan consists in the evacuation of the aqueous humor, repeated daily, or even oftener, for a long period. He regards his method as best adapted for hard cataract, as he considers the soft form indicates more complete degeneration of the lens. The theory on which he bases his treatment, is, that cataract is the result of choroidal congestion which is relieved by paracentesis. He claims for his plan, efficacy, not only in preventing incipient cataract from becoming complete, but in effecting resolution of opacity which has already reached an advanced degree. It will be easy, by accurate observations as to the acuteness of vision, according to the method of Prof. Donders, to test the actual results arrived at; so as on the

one hand not to reject any method which might render one of the capital operations of less frequent necessity, and, on the other, not to accept a plan which would open a wide door to abuses if not really of unquestionable service. I had opportunities of observing the application of this mode of treatment, not only to a large number of cases of cataract, but in many inflammatory affections of the eye, in some of which evacuation of the aqueous has long been admitted to be of value.

Prof. Sperino is also a strong advocate for the destruction of the lachrymal sac when affected with chronic inflammation. This he effects by a caustic preparation of zinc inserted through an incision in the skin. After a few days, the partially disorganized sac is forced out by strong pressure.

The memory of Scarpa is still deservedly cherished and his authority appealed to, by the oculists of Italy, and perhaps no modern writer has contributed more to the advancement of ophthalmic science than he accomplished in his time. His clear and concise descriptions might even now serve as models; and his labors should not be forgotten, for to him we owe much of the foundation which furnished so firm a base for what has since been added.

Truly yours, H. W. Williams.

Berlin, Prussia, 9th July, 1863.

OXALIC ACID FROM SAWDUST.

At the last Pharmaceutical Meeting, Edinburgh, Dr. Murray Thomson, F.R.S.E., read a paper on Mr. Dale's new method for the manufacture of oxalic acid.* The idea of making oxalic acid by acting on sawdust with an alkali was not quite new on the part of Mr. Dale, as in 1829 M. Gay-Lussac published a memoir, in which he announced that M. Vauquelin had converted pectic acid into oxalic acid, by heating the former along with caustic potassa in a crucible. M. Gay-Lussac followed up this discovery by a number of experiments, in which he demonstrated that when a number of substances were treated with potassa they yielded oxalic acid. Among the substances he tried were cotton, sugar, starch, and gum. Any of them, when heated with caustic potassa or soda, gave off hydrogen gas, while the mixture charred; and at length oxalate of potassa or soda was found in the black residue, and could easily be dissolved out of it.

Gay-Lussac tried a number of the vegetable acids, and showed that these might be converted into oxalic acid without charring of the mixture ensuing, and on that circumstance he tried to form an explanation of the process.

But although the memoir of Gay-Lussac had been published for

* Reported in Pharm. Journal.

twenty years, no one had proposed using it as a source of oxalic acid on the large scale until Mr. Dale did two or three years ago. And although Gay-Lussac was the first to broach this method of making oxalic acid, it must not be thought that his memoir showed a way by which this result might be obtained free of obstacles; for Mr. Dale found that there was more than one practical difficulty to be overcome before he reached a successful issue. One of the chief of these was that Mr. Dale did not find the sawdust, when heated with caustic soda, was converted into oxalate of soda, as Gay-Lussac would imply. He says that soda or potassa may be used indifferently, but Mr. Dale found that with soda sawdust yielded almost no oxalic acid; while, on the other hand, he was precluded from using potassa on the large scale on account of its high price, though he was quite successful when he used it. At last this difficulty was overcome by using a mixture of soda and potassa, in the proportion of two equivalents of the former to one of the latter; and this, it was found, was as effective as potassa alone. The practical details of the process are as follows:—

1. The alkalies, mixed in the above proportion, are dissolved, and the solution evaporated until of specific gravity 1·35; sawdust is now stirred in until a thick paste results.

2. This paste is then heated on iron plates, during which it is constantly stirred; water is first given off; the mass then swells; inflammable gases, hydrogen and carburetted hydrogen are evolved, along with a peculiar aromatic odor. When the temperature has been maintained at 400° for one or two hours, this stage of the process is complete; the mass has now a dark color, and contains only 1 to 4 per cent. of oxalic acid, and about 0·5 per cent. of formic. The bulk, therefore, of the mass at this stage consists of a substance whose nature is not yet known, but which is intermediate between the cellulose and oxalic acid.

3. The next stage consists in a single extension of the last, in which the mass is heated till quite dry, care being taken that no charring takes place. It now contains the maximum quantity of oxalic acid, 28 to 30 per cent.

4. This oxalic acid is now combined with both potassa and soda in the grey powder resulting from stage 3. This powder is now washed on a filter with solution of carbonate of soda, which seems to have the singular and unexpected power of decomposing the oxalate of potassa, and converting it into oxalate of soda. At all events, it is quite true that all traces of potassa are washed out with the solution of carbonate of soda. The only explanation that occurs to account for this unusual decomposition is that oxalate of soda is a more insoluble salt than oxalate of potassa, and therefore may be formed by preference.

5. This oxalate of soda is now decomposed by boiling milk of lime. Oxalate of lime falls as a precipitate, and soda remains in

solution. This soda is boiled down, and again made use of with fresh sawdust. This recovery of alkali is also practised with the potassa salt which filters through in the last stage.

6. The oxalate of lime is now decomposed in leaden vessels with sulphuric acid. Sulphate of lime is precipitated, and oxalic acid is in solution, which is now evaporated, and the acid separates in crystals, which now need only to be recrystallized to make them quite pure, and fit the acid for all the purposes for which it is employed.

By this ingenious process, two pounds of sawdust are made to yield one pound of oxalic acid, and the amount of acid which can be turned out in a week amounts to nine tons; but the works of Messrs. Roberts, Dale & Co. (near Manchester), could make nearly double that amount. This amount is more than half of all the oxalic acid which is reckoned to be used all over the world. The process also has so much cheapened the price of oxalic acid, that in 1851 it sold for 16*d.* per pound, and now it only costs from 8*d.* to 9*d.* per pound.—*Am. Jour. of Pharmacy* from *London Chemist and Druggist.*

PERMANGANATE OF POTASH AS A DISINFECTANT.

Dr. Ploss speaks in the highest terms of the disinfecting power of this substance. It effectually removes all smell from the most stinking suppurating sores and discharges. Most remarkable results of this kind have followed its injection, repeated several times a day, in cases of cancer of the uterus—half a drachm to eight ounces of distilled water being a good proportion. In the case of open wounds and ulcers, all the dressings covering them should be moistened with the solution. No means succeeds more rapidly than this in removing the disagreeable smell of the hands after the performance of autopsies, for which purpose a stronger solution (ʒ ss ad ℥ j.) may be employed. It is far superior to chlorine in its effects, which are not, as is the case with that substance, fugitive. For this reason it is a superior prophylactic, applied to the hands of accoucheurs, to chlorine in puerperal fever. In ozœna it is strongly to be recommended, the solution (℈ ss ad ℥ viii.) being introduced into the nares by means of a caoutchouc syphon. In bad smells of the mouth, resulting from carious teeth, it is an admirable means, a little cotton wool being moistened in a weak solution. Finally, the permanganate is to be recommended as a wash for stinking feet. This remedy deeply stains linen it comes in contact with, but the spots may be removed by means of the sulphate of iron.—*Am. Druggists' Circular* from *Varges' Zeitschrift,* N. S., vol. i., p. 187.

Bibliographical Notices.

"Consolidated Statement of Gun-shot Wounds."

A PAMPHLET of a dozen pages, and bearing the above title, has just been issued from the office of the Surgeon General of the U. S. A. It contains a series of statistical tables, showing the number, variety and results of gun-shot wounds treated in the army hospitals during the months of September, October, November and December, 1862. These have been made up from the returns of 167 hospitals, "reports from others, obviously inaccurate, having been excluded as unreliable." As there are upwards of 225 General Hospitals in the United States, the records of a large number must have been thrown out, and in questions of statistics like the present, this fact suggests the inquiry where and how the limit between accuracy and inaccuracy has been drawn or determined. We are sorry to learn that, previous to September last, "the surgical statistics of the war are absolutely worthless;" but glad to find it asserted that, from measures since adopted, better results are anticipated, and more definite returns, both as to the nature of wounds and their final results, are to be hoped for in the future. Any one who has had practical experience in Army Hospitals, will readily appreciate the difficulties which the statistician at Medical Headquarters must experience. The transfer of patients from one Hospital to another, so constantly, and, to the surgeon in charge, oftentimes so unexpectedly occurring, is mentioned as the greatest difficulty to be encountered in the preparation of these tables, and one, it seems to us, which must be the constant source of unavoidable error and confusion. Any attempt, too, to include in the history of the wounded the cases of the deserted, the discharged, or the furloughed, (except such as return at the expiration of their leave of absence, as a large proportion of them do not,) and who, operated on at their homes, or in Civil Hospitals, die, or are finally discharged in their respective States, must render the data, so far as results are concerned, of little real value. If we can learn the true history of a given number of wounded—and, in such a war as we are engaged in, this must of necessity be a large number—feeling sure, as we scan the figures, that no uncertainties have been allowed to creep in for the sake of swelling the aggregate, the present rebellion cannot fail to furnish one of the most valuable contributions to Military Surgery which has yet emanated from any country. We all know the efforts which are being made to this end by Surgeon General Hammond, and into what competent hands he has entrusted the immediate supervision of this duty. Discrepancies will creep into the most carefully prepared tables; they are to be found in the great "Blue Book" Medical and Surgical History of the Crimean War, and Dr. Brinton can hardly expect to walk unspotted through the labarynth of figures, which must so sorely try and vex his patience. We propose to give an idea of the tables contained in the pamphlet which has suggested these remarks, and to indicate some of their most striking features.

Table No. I is a "Statement of gun-shot wounds treated in the U. S. A. General Hospitals during the months of September, October, November and December, 1862, showing the number returned to duty, furloughed, deserted, discharged, died, and remaining under treatment

Jan. 1, 1863." This Table is subdivided under the heads of "Flesh wounds," "Wounds of Cavities," "Gunshot Fractures," "Wounds of Joints," "Contusions and Injuries by spent balls," and "Miscellaneous." The whole number of wounded is 20,930. From its figures we learn that of 495 "wounds of the lungs" 192 died, 112 were discharged, 7 deserted, 17 were furloughed and 4 were exchanged as prisoners, 163 remaining under treatment. We find also, with some surprise, that of 19 "wounds of the stomach," 6 were discharged, 1 furloughed, 7 remained under treatment, and that 5 only had died. Of 72 "wounds of the intestines," 4 were discharged, 9 deserted, 2 furloughed, 14 remained under treatment, and 43 died.

Table No. II. shows the treatment, under the three heads "Amputation," "Excision," "Simple dressing," of 20,429 of the cases contained in table No. I.

Table No. III. is perhaps the most remarkable of all, as it undertakes to account, in 18,554 cases, for the character of the missile inflicting the wound, i. e. whether "round bullet," conical bullet," "shell," "round shot," or "other missile," under which last head only 514 cases are registered. In 16,352 cases, the injury is positively referred to either a conical, (10,798 cases,) or a round bullet, (5,554 cases). Now as by table No. VI. it appears that in but 604 cases bullets were extracted, it seems as if but little reliance could be placed on table No. III., for the difficulty in deciding the nature of gun-shot wounds, *quoad* the missiles inflicting them, is well known to be in the majority of cases insuperable. After a thoroughly careful investigation of the whole subject, Legouest says, "I do not hesitate to assert that, in the majority of cases, it would be impossible for the most experienced military surgeon, or the most accomplished expert in legal medicine, to discriminate between the effects of round and conical bullets with sufficient certainty to enable him to designate positively the form of the projectile which has produced them."

Table No. IV. contains a statement of Amputations and their results. In Dr. Brinton's letter to the Surgeon General, accompanying this report, he says, "the results of injuries of the different thirds of the thigh were not obtained by the issue of the first edition of the sick report," this edition being the one on the exhibit of which the tables given are said to be collated. Yet in table No. IV., the results of *amputations*, under the separate heads of the different thirds, are distinctly given. The following table will show the results of these operations:

Point of amputation.	No. of Cases.	Deaths.	Under Treatment.	Percentage of Deaths.
Lower third.	119	62	42	52.1
Middle third.	129	65	54	50.4
Upper third.	64	45	14	70.3

These figures represent a better degree of success than has usually been attained in military practice, but then it is to be observed how large a proportion of cases still remain under treatment.

Owing to the importance of the subject, and to furnish some information on the subject, Dr. Brinton gives, on page 4, a table showing the number of gun-shot fractures treated by "amputation," "excision," and "simple dressing," during the first quarter of 1863, together with those remaining under treatment (75 in number) Jan. 1st,

1863, the figures being "extracted from the April reports now in process of compilation." We give below the table thus referred to :—

	Total No. of cases.	Amputation.	Excision.	Simple dressing.	Treatment not stated. Probably simple dressing.	Returned to duty.	Furloughed.	Discharged.	Died.	Remaining under treatment Apr. 1, 1863
Upper third.	103	22	2	53	26		1	25	24	53
Middle third.	143	46	1	83	13	1	2	41	26	73
Lower third.	137	35	3	85	14		9	38	25	65
Total.	383	103	6	221	53	1	12	104	75	191

The slight difference in the mortality of injuries at the lower and middle third, as shown by this table, is noticeable.

Table No. V. has reference to the Excisions which have been performed. Under the head of "Jaw," and the context leads us to suppose that the temporo-maxillary articulation is meant thereby, we have a total of 16 operations. At the knee, 9 cases, with 8 deaths and one under treatment. At the hip, 16 cases, with 9 deaths and 7 under treatment. Between this table and Nos. I. and II., we find a want of accordance in the numbers. Nor are we able to account for the difference, since in No. II., which states the whole number of operations, we find but 8 cases of excision of the hip-joint, and in No. V., which shows the results, we have a total of 16 cases. In table No. I. also, the number of injuries of the hip-joint is stated at 146, whilst in No. II., which shows the method of treatment, the total of cases is 155.

Table No. VI. enumerates details as to the extraction of balls.

Table No. VII. shows the results of Trephining, viz., 35 operations, of which 32 were secondary, 28 terminating fatally and 2 being under treatment. Of the 5 cases which recovered, 4 were secondary operations and one was primary.

Table No. VIII. has reference to the Ligature of Arteries. From this it appears that of 86 ligatures of different vessels, 42 terminated fatally, 11 were discharged, 2 returned to duty, 1 deserted and 30 remained under treatment. Of 2 instances of ligature of the common carotid, 1 proved fatal and 1 was discharged. Of 2 of ligature of the subclavian, 1 died and 1 was discharged. Of 15 ligatures of the brachial, 4 proved fatal, 3 were discharged, 1 returned to duty, 1 deserted and 6 remained under treatment. Of 4 ligatures of the external iliac, 3 terminated fatally and one remained under treatment. Of 38 ligatures of the femoral, 26 were fatal, 2 were discharged and 10 remained under treatment. In this table also is included an instance of the successful ligation of the internal jugular vein.

Table No. IX. refers to miscellaneous operations and contains no facts of special interest.

Nothing reveals more impressively the magnitude of the battles which we have been fighting than a comparison of the tables which we have above hastily described, and which give the number of wounded in our hospitals during a period of only four months, with the tables which show the number of wounded in the French and English

armies during the Crimean campaign. In the entire war, which covered parts of three years, the English, with an effective force of 97,864 men, had an aggregate of wounded amounting to only 12,164, and the French, with a force of 309,000, a total of wounded reaching but 39,868. In other words, the hospital accommodations required by the English during the whole Crimean war, would not have equalled the demands of either the battle of Shiloh, Antietam, or Gettysburg. What consideration may we not claim then, if the French offer their encumbered ambulances as an explanation of the mortality following their portion of the surgery in the Crimea, and when the most striking illustration of this is the statement that, at the assault on the Malakoff (Sept. 8, 1854), 4,472 wounded Frenchmen and 554 Russians were thrown upon their hands, and, in spite of all the activity which was displayed by the surgeons, that the necessary operations and dressings were not completed until Sept. 11th. At either of the battles we have named, there were double the above number of wounded Federal troops.*

Having noticed in this cursory way some of the salient points in the pamphlet before us, we would remark in conclusion, that what we are to look forward to, in a professional point of view, as the results of this rebellion, is not the statistical tables issued from medical headquarters and the conclusions derived from them, but rather the impressions and observations of intelligent and thinking men, who have labored and studied on the battlefield and in the hospitals, of Regimental Surgeons and Surgeons of Volunteers, who shall give their own unprejudiced experience, accumulated in the long days and nights which they have spent among the sick and wounded. Larrey, Guthrie, Hennen, McLeod, Stromeyer, Esmarch, Legouest, our best authorities hitherto, gained their ability to write as they have by actual service, and whilst the value of statistics, as to their collateral and confirmatory importance, is not to be depreciated, nor the faithful labors of those who work at them, no one but themselves knows how hard, to be too lightly estimated, still it is from the shrewd observing minds of those who have been able to endure through all the hardships of the rebellion, with their intellects clear and their energies unabated, that we are to expect the *practical* military surgeries, which shall place us, as we believe we are this day in fact, above and beyond all other powers in what appertains to the Art of Medicine in its relations to the Art of War.

THE BOSTON MEDICAL AND SURGICAL JOURNAL.

BOSTON: THURSDAY, AUGUST 27, 1863.

MEDICAL COMMUNICATIONS TO THE CONNECTICUT MEDICAL SOCIETY AT THEIR ANNUAL MEETING FOR 1863.—These communications, seven in number, taken as a whole, reflect great credit upon the Society to

* At Gettysburg "the estimated number of wounded was, on Monday, July 7th (three days after the battle), 20,000 National and rebel soldiers. Of these, 6,000 were rebel wounded, deserted by all but five of their own surgeons."—*Letter of Dr. Bellows, Pres. San. Com.*

which they were addressed. They show a high standard of medical attainment in their authors, and give evidence that the profession at large aims at keeping up with the progress of our science the world over, at the same time that it is not indifferent to the questions which particularly interest us in our own country and at the present time.

The first paper is the Annual Address by the President of the Society, Dr. Josiah G. Beckwith, of Litchfield, on the "Dignity and Grandeur of the Medical Profession." The subject certainly is not a new one, and requires uncommon skill and ability on the part of the author to avoid being drawn into the most soporific of commonplaces. These qualities Dr. Beckwith has shown in this discourse, which any one may read with much pleasure and profit. The greater part of it consists in a condensed historical view of the medical profession from the earliest recorded times down to the present century, thus connecting it with a previous address, which gave a history of the progress of medicine during the present century. The address concludes with some just and dignified reflections on the whole subject of the position and duties of the profession, conceived in the best spirit and expressed in excellent taste. The whole paper is most creditable to its author and will be very useful for reference as a condensed historic summary of the growth and development of our science.

Article second is the annual dissertation before the Connecticut State Medical Society for the current year, by Dr. James C. Jackson, of Hartford. Its subject is "Logic applied to Medical Science," and consists in a brief exposition of the various steps which a student of medicine at the present day must pursue to place his investigations and deductions on a level with the researches and discoveries in the departments of physical science; the only way to a steady and permanent advance.

Article third is a vindication of Army Surgeons, by Dr. Ashbel Woodward, Surgeon 26th Connecticut Volunteers. This is a manly defence, by one who speaks from his own knowledge, of the large class to which he belongs, concerning whom the community have been too willing to listen to words of complaint rather than words of praise. Admitting the justice of many things that have been said in disparagement of some who, early in the history of the war, have held the responsible office of Army Surgeon, Dr. Woodward shows that such disparagement is by no means universally deserved, but on the contrary that the medical staff of the Army ought, in the main, to be held in the highest honor. He gives an interesting sketch of the peculiar difficulties of their position, and of the arduous and responsible duties belonging to it, and furnishes a very plausible explanation of many of the injurious reports which have been circulated from time to time with regard to particular surgeons. Of one source of such malicious rumors Dr. Woodward says:—

"Able-bodied soldiers, laboring under no trouble unfitting them for the service, often besiege the surgeon to obtain assistance in procuring discharges. After giving them a thorough examination, he declines to become a party to any such scheme. The disappointed applicant takes revenge by denouncing the officer who has frustrated his villainy. Distant friends are written to, and their sympathies enlisted. Where numerous coteries, scattered here and there over the land, accept one-sided testimony for truth, the aggregate of falsehood thus

believed and of injustice thus done, swells to fearful dimensions. The writer is happy to say that little of this querulousness and fault-finding, has fallen under his own observation. Extensive inquiries, however, have adduced a large amount of concurrent testimony — all tending to show that faithful surgeons as well as other officers have for the time being suffered in reputation, from the mis-statements of soldiers whom they have balked in their attempts, either to evade their duties, or to escape from the service. It is this complaining, petulant, excrescent portion of the army, including occasionally officers as well as privates — men who nowhere and never, even under the most favoring circumstances, discharge with zeal and alacrity the duties of a soldier — a class of persons with which every body of troops is more or less scourged—always a trouble in the camp and a burden then upon the hospitals—it is from such and such alone, that the competent and faithful surgeon suffers in reputation."

The author concludes with a hopeful view of the present struggle, and, professionally, of the advantages likely to ensue in elevating the standard of surgical skill.

The next paper is on the use of "Calomel in Scarlatina," by Dr. Ebenezer K. Hunt, of Hartford. The author advocates the use of this drug on the ground of its alleged power of controlling inflammatory action, promoting secretion and maintaining the healthy action of all eliminating surfaces and bodies. He attributes the frequency of troublesome sequelæ to this disease of late years to the disuse into which calomel has fallen. His method of treatment is as follows:—

"It becomes then eminently proper, if the foregoing views are correct, to begin at the outset of the disease, with the use of this potent remedy. An emetic of ipecac, for which, if the arterial excitement is strong and the skin is hot and dry, tart. antim. et potassæ may be substituted, combined with from four to six grains of calomel for a child from four to six or eight years of age, may be given as soon as the disease becomes manifest. Nor, let me observe, would it in my opinion, be bad practice, even in those cases which at the outset are obscure and often simulate those ephemeral maladies to which childhood is so subject, to administer the combination just named, even though the result of the case should demonstrate that less active agents would have answered equally well. Time is often exceedingly precious in scarlatina; and upon the right beginning of its treatment frequently hinges the well-being, and life even, of our patients.

"To proceed: The use of the combination above named, will usually, thoroughly evacuate the stomach and also produce one or more alvine discharges; quickening at the same time, the actions of the entire glandular and follicular system. Its revulsive effect will also be salutary; tending, as it will, to secure and maintain cutaneous transpiration and a proper equilibrium of the circulation. Subsequently, the mercurial should be employed so as to move the bowels once or twice every twenty-four hours. This may be done by combining it in doses, say of gr. ½ to be given every four hours, with some appropriate refrigerant or anodyne remedy, adding to this, morning or evening, or at both periods if found necessary, some two grains, to be given at a single dose. This will generally maintain, throughout the whole course of the disease, free secretory action

from all eliminating surfaces and keep the bowels in a sufficiently open and soluble condition.

"Cooling and febrifuge remedies, like spt. æther. nit., the neutral or effervescing draughts, sponging the surface freely with cold or tepid water, and its free use as a drink, if preferred; also, such topical remedies as may be indicated, are all proper and often doubtless needful when the reaction is considerable, and should be used, as circumstances require.

"In those cases also in which the oppression of the brain and nervous system is well marked, but not extreme, and the reaction but moderate, I generally resort to an emetic, in conjunction with a few grains of calomel at the outset; and am governed subsequently by the degree of reaction which follows their use, as to the further continuance, as well as to the quantity of the latter."

Dr. Hunt does not give cases in illustration of his practice, and his statements and opinions therefore can only have the weight which those of any honest practitioner are entitled to in urging his own individual views.

Article fifth is on the "Physiology of the Crystalline Lens, or the adjustment of the eye to distinct vision at different distances," by Dr. Moses C. White, of New Haven. The subject is one of special interest and is attracting considerable attention at the present time. This paper is mainly made up of a translation from the work on Optics by M. Daguin, as his views coincide so exactly with those of the author and are at variance with the commonly-received opinions of English authors. The paper is a very interesting one, and concludes as follows:—

"These remarkable experiments remove all doubt about the action of the crystalline lens, and establish the position, that: The principal modification of the eye, to adapt it to distinct vision at different distances, consists in changes in the form of the crystalline lens; and it seems almost certain that these changes are produced by a vital contraction of the fibres of which the lens is composed — the fibres of the crystalline lens being endowed with the power of contracting and changing the form of the lens in obedience to the will."

Article sixth, a "Sanitary Report of Hartford County," is a carefully-prepared article by Dr. Lucian S. Wilcox, of Hartford, containing some interesting statistical information, together with a comparison of some recent anomalous cases of disease, with the recorded histories of the so-called spotted fever.

Article seventh is the history, by Dr. Moses C. White, of New Haven, of a strange surgical case in which a nail broken off in the foot spontaneously separated into twenty-six pieces, which were successfully removed from time to time, after intense suffering. The pieces were removed during the period of ten months. The paper is illustrated by a wood-cut showing the shape and size of the various fragments.

Next follow several biographical sketches of members of the Connecticut State Society deceased during the past year, together with the business records of the Society for the year, the whole concluding with a list of Surgeons and Assistant Surgeons appointed to the Connecticut Volunteer Regiments. The whole publication shows an active spirit in the Society and a desire on the part of its members to do their part in enlarging the domain of medical science.

In a private note to the Editors, Dr. Walter Channing writes as follows:—

"Squibb's ether seems to me to be the best and safest anæsthetic, and to accomplish all that ether and chloroform united might have done. I use ether now as freely as I did when my book on etherization was published, and with the same beneficial effects. Patients ask for, nay, beg for it and they get it. In one case, Squibb's was used. I had eight ounces got. It was applied as Cologne water is to a handkerchief, in very small quantities. Mrs. A. called for it when uterine action was beginning. She was perfectly conscious of the contraction of the organ, but had not the least pain, and this continued till delivery occurred. The labor was as long as a good *first* labor ever is. Two ounces of the ether remained in the phial after its use ceased."

Our experience agrees, in the main, with Dr. Channing's. We have never felt there was any danger in the use of sulphuric ether as an anæsthetic in ordinary or complicated cases of labor, where there was sufficient expulsive action of the uterus. We have been obliged to suspend its use in some instances, where the uterine action was feeble, and the anæsthetic plainly interfered with the progress of the case; circumstances, such as an almost entire absence of liquor amnii, making it important that the labor should not be unnecessarily protracted on account of danger to the child.

We take the following extract from a paper by Dr. Flint on the treatment of Phthisis, read before the New York Academy of Medicine, from the report in the New York *Medical Times*.

"For convenience of analysis he arranges the cases in three groups. I. Those in which no curative or hygienic methods of management were employed. II. Those cases in which hygienic measures were employed. III. Cases in which remedial measures, including alcoholic stimulants, were supposed to have had a curative influence. I. In the first group seven cases are collected, of which four recovered entirely. II. The second group includes twenty cases, in twelve of which the recovery appeared to be complete, in eight the arrest of the disease was not followed by complete recovery within the period that the condition of the patients severally was known. The ages in this group ranged between nineteen and fifty years, and seventeen of these were males. In only four of the cases are there any grounds for supposing that climate had any curative influence. The most important point of agreement developed by the analysis of this group of cases relates to change of habits as regards exercise and out-door life, and the agreement in this respect is highly significant. III. The third group embraces thirty-five cases. Only one of these cases was treated with tonic remedies, exclusive of cod-liver oil and alcoholic stimulants. In four tonics were employed in conjunction with alcoholic stimulants, and in two tonic remedies were conjoined with cod-liver oil; alcoholic stimulants and cod-liver oil were employed conjunctively in eight cases. Stimulants, oil, and tonics were used in one case. The curative remedies employed were only three in number: cod-liver, alcoholic stimulants, and tonics of iron and quinine. In five of the thirty-five cases, the curative treatment consisted exclusively of cod-liver oil; in two of these the symptoms entirely

ceased. Of these thirty-five cases, in fourteen the curative treatment consisted exclusively in the use of alcoholic stimulants; of these fourteen cases of arrest, in nine the recovery was apparently complete. Generous living was inculcated and adopted as far as practicable in all the cases.

"The most striking and valuable of the results of the analytical study of these sixty-two cases is their almost uniform agreement as regards change of habits with respect to exercise and out-door life at the time of the arrest. Excluding the seven cases of the first class, and two in which the facts with respect to this point were not noted, of the remaining fifty-three, in all save three, the histories show a greater or less change of habits to have been made; and in many cases the change consisted in relinquishing sedentary callings for other pursuits, in order to carry out more effectually the desired reformation."

We have received Lindsay & Blakiston's "Physician's Visiting List for 1864." The present issue has various additions and improvements on the previous editions, which materially increase its usefulness. The price is somewhat greater than in former years, and is now, for copies prepared for twenty-five patients, sixty-three cents and one dollar; and for fifty patients, seventy-five cents and one dollar and a quarter, according to the style of finish.

VITAL STATISTICS OF BOSTON.

FOR THE WEEK ENDING SATURDAY, AUGUST 22d, 1863.

DEATHS.

	Males.	*Females.*	*Total.*
Deaths during the week - - - - - - - -	51	63	114
Ave. mortality of corresponding weeks for ten years, 1853—1863,	49.8	51.3	101.1
Average corrected to increased population - - - - -	00	00	111.55
Death of persons above 90 - - - - - - - -	0	0	0

Mortality from Prevailing Diseases.

Phthisis.	Croup.	Scar. Fev.	Pneumon.	Variola.	Dysentery.	Typ. Fever.	Chol. Infan.
17	2	0	4	0	6	3	29

BOOKS AND PAMPHLETS RECEIVED.—The Pharmacopœia of the United States of America. Fourth Decennial Revision. By authority of the National Convention for revising the Pharmacopœia, held at Washington, 1860. Philadelphia. J. B. Lippincott & Co. 1863. —A Manual of Instructions for enlisting and discharging Soldiers. By Roberts Bartholomew, A.M., M.D., Ass't Surgeon, U. S. Army, &c. Philadelphia. J. B. Lippincott & Co. 1863.—The Nature, Causes and Treatment of Nervous Deafness. Translated from the French of "Duchenne." With additions. By Laurence Turnbull, M.D., Aural Surgeon to, and Lecturer on Aural Surgery at, Howard Hospital, Philadelphia. Philadelphia. Lindsay & Blakiston. 1863.

DIED,—In Dorchester, Aug. 22d, Dr. James W. Stone, 40.

DEATHS IN BOSTON for the week ending Saturday noon, Aug. 22d, 114. Males, 51—Females, 63.—Abscess, 1—apoplexy, 2—inflammation of the bowels, 1—ulceration of the bowels, 1—congestion of the brain, 3—disease of the brain, 4—cancer, 1—cholera infantum, 29—cholera morbus, 3—consumption, 17—convulsions, 7—croup, 2—debility, 1—diarrhœa, 3—diphtheria, 3—dropsy, 2—dropsy of the brain, 2—drowned, 2—dysentery, 6—typhoid fever, 3—hernia, 1—infantile disease, 4—intemperance, 1—jaundice, 1—disease of the liver, 1—inflammation of the lungs, 4—marasmus, 1—old age, 1—paralysis, 1—premature birth, 1—tabes mesenterica, 1—unknown, 3—whooping cough, 1.

Under 5 years of age, 62—between 5 and 20 years, 7—between 20 and 40 years, 20—between 40 and 60 years, 15—above 60 years, 10. Born in the United States, 75—Ireland, 31—other places, 8.